

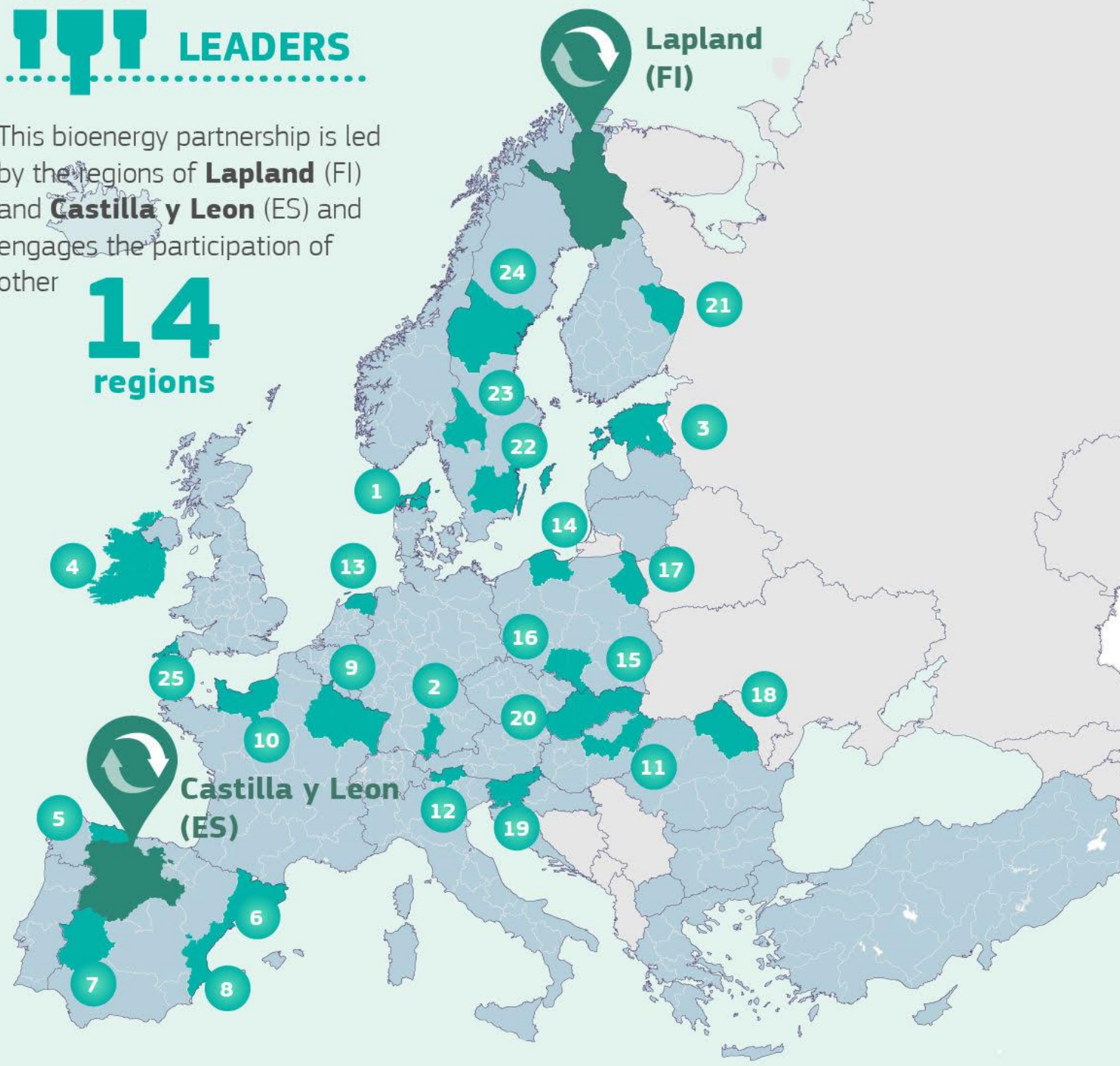
BIOENERGY



LEADERS

This bioenergy partnership is led by the regions of **Lapland (FI)** and **Castilla y Leon (ES)** and engages the participation of other

14
regions



S3 Partnership on Bioenergy Preliminary survey results

Brussels, 26 January 2018



Context – Objectives

- This questionnaire aims at collecting the information that will allow identifying possible synergies and complementarities between participating regions.
- Based on the collected information, a set of interested regions and specific areas for collaborations including synergies/complementarities will be identified for each topic, in order to tackle specific challenges and embrace opportunities.



Context - Structure of the questionnaire

1. General information
2. Bioenergy availability (the main species that account for more than 5% of the total biomass potential)
3. Bioenergy installations (biofuel production plants, power plants, termal energy plants)
4. Bioenergy consumers
5. Bioenergy companies
6. Bioenergy institutions

Context - Format & Process

Format:

- Excel based questionnaire
- Pre-formatted answers (drop-down menu's)

Process:

- First draft by Castilla y León
- Several iterations (lead regions and IDEEA Consult)

Who should fill in the questionnaire:

- Regional representatives

➔ Launch: November 2017

➔ Ljubljana November 2017: Discussion preliminary results

➔ December 2017 - January 2018: Analysis & presentation survey results



Preliminary results – Respondents (18/01/2018)

#	Country name	Region name	Climate typology	Regional population (inhabitants)
1	Slovenia	East Slovenia	Temperate continental / humid continental climate.	2.000.000
2	Croatia	North-West Croatia	Temperate continental / humid continental climate.	1.300.000
3	Finland	Kainuu	Cool continental / subartic climate	78.000
4	Finland	North Karelia	Cool continental / subartic climate	164.000
5	Finland	Lapland	Cool continental / subartic climate.	179.000
6	Finland	Central Finland	Cool continental / subartic climate.	274.000
7	Finland	South Ostrobothnia	Cool continental / subartic climate.	194.000
8	Romania	Centru	Temperate continental / humid continental climate.	2.360.000
9	Spain	Asturias	Temperate oceanic climate.	1.043.000
10	Spain	Castilla y León	Cool continental climate.	2.700.000

N.B.: The questionnaire from 'Algarve' is not yet included in the survey results



Preliminary results - Bioenergy availability - Raw materials

Type of raw materials	Regions (N)	Regions	Areas for collaborations	Consensus between forest owners, residues managers... about next ten years market development (<i>N regions</i>)
Bioenergy raw material from forestry	8	Asturias; Centru; Central Finland Castilla y León; Lapland; North-West Croatia ; East Slovenia; South Ostrobothnia	<ul style="list-style-type: none"> • Management harvesting, Forestry machinery (Asturias, South Ostrobothnia, Castilla y León) • Logistic of supply (Asturias, Slovenia, Centru, North-West Croatia) • Transparent market (Castilla y León, East Slovenia, Asturias) • Etc. 	Moderate decline (1) Stable (2) Moderate growth (3)
Bioenergy raw material from urban residues origin	5	Asturias; Centru; Central Finland; Lapland; South Ostrobothnia	<ul style="list-style-type: none"> • Logistic of supply (Lapland, Centru, Asturias) • Marketing tools (Asturias, Central Finland) 	Stable (1) Moderate growth (1) Strong growth (1)
Bioenergy raw material from agriculture (herbaceous or ligneous)	4	Centru; Central Finland Castilla y León; South Ostrobothnia	<ul style="list-style-type: none"> • Training / knowledge (Central Finland, Centru) 	Stable (1) Moderate growth (1)
Wood	2			Strong growth (2)
Bioenergy raw material from agro-food industry origin	2			Moderate growth (1)
Manure	2			Stable (1)
Bioenergy raw material from farm	2			Moderate growth (2)
Energy crops	1			



Preliminary results - Bioenergy availability - Complementarities (Forestry)

Processes, know - how, technologies etc. in which the region is especially competitive or has best practices

Bioenergy raw material from forestry

Asturias

Excellence of management harvesting, forestry machinery.

Existence of studies about potential possibilities.

Good logistic of supply.

Good quality control.

Non mono or oligopolistic property market of raw materials.

Centru (Romania)

Industrial consume interest

Public support for efficient management of wastes.

CyL

Non mono or oligopolistic property market of raw materials.

Public support for efficient management of wastes.

Transparent market in quantity, prices and qualities of raw materials.

NWC

Good quality control.

(blank)

Slovenia

Existence of studies about potential possibilities.

Good logistic of supply.

Good quality control.

South Ostrobothnia

Excellence of management harvesting, forestry machinery.

Processes, know - how, technologies etc. in which the region is especially interested to enhance

Bioenergy raw material from forestry

Asturias

Developed marketing tools.

To involve and inform agriculturist, farmers, forest owners, etc. to a profit use of its bioenergy raw material.

Transparent market in quantity, prices and qualities of raw materials.

Centru (Romania)

Developed marketing tools.

Good logistic of supply.

To involve and inform agriculturist, farmers, forest owners, etc. to a profit use of its bioenergy raw material.

CyL

Developed marketing tools.

Excellence of management harvesting, forestry machinery.

NWC

Good logistic of supply.

Public support for efficient management of wastes.

(blank)

Slovenia

Excellence knowledge of biogas productivity from animal manure

Good quality control.

High financial interest.

Industrial consume interest

Public support for efficient management of wastes.

Special training for agriculturist / farmers

To involve and inform agriculturist, farmers, forest owners, etc. to a profit use of its bioenergy raw material.

Transparent market in quantity, prices and qualities of raw materials.

South Ostrobothnia

To involve and inform agriculturist, farmers, forest owners, etc. to a profit use of its bioenergy raw material.



Preliminary results - Bioenergy availability – Complementarities (Urban residues)

Processes, know - how, technologies etc. in which the region is especially competitive or has best practices

Bioenergy raw material from urban residues origin

Asturias

Big quantity of raw material.

Existence of studies about potential possibilities.

Good logistic of supply.

Industrial consume interest

Public support for efficient management of wastes.

Centru (Romania)

Industrial consume interest

CF

Developed marketing tools.

Excellence of management harvesting, forestry machinery.

Good logistic of supply.

(blank)

Lapland

(blank)

South Ostrobothnia

Good logistic of supply.

Energy crops

Processes, know - how, technologies etc. in which the region is especially interested to enhance

Bioenergy raw material from urban residues origin

Asturias

Developed marketing tools.

Good logistic of supply.

Industrial consume interest

To involve and inform agriculturist, farmers, forest owners, etc. to a profit use of its bioenergy raw material.

Transparent market in quantity, prices and qualities of raw materials.

Centru (Romania)

Existence of studies about potential possibilities.

Good logistic of supply.

Public support for efficient management of wastes.



Preliminary results - Installations

Types of plants	Species	Nº of plants	Regions (N)	Regions	Areas for collaborations	Consensus, between biofuel plants owners, about next ten years market development (<i>N regions</i>)
Biofuel	Chips plants	96	2	East Slovenia South Ostrobothnia	Needs to develop marketing tools (East Slovenia, Castilla y León)	Moderate growth (1)
	Pellets plants	31	5	Central Finland Castilla y León Kainuu North Karelia East Slovenia South Ostrobothnia		Stable (1) Moderate growth (2)
Power plants	Biogas plants	26	5	Asturias Kainuu North Karelia East Slovenia South Ostrobothnia	Convincing studies about possibilities in order to tackle controversy (Asturias, East Slovenia)	Stable (3)
	Chips plants	34	4	Asturias Kainuu North Karelia East Slovenia	A decrease of exploitation cost through good logistic of supply (Asturias, East Slovenia)	Stable (2) Moderate growth (1)
Energy plants	Chips plants	182	7	Asturias Centru Kainuu North Karelia North-West Croatia East Slovenia South Ostrobothnia	Building and strengthening the value chain: consumers interest, Farmers and harvesters collaboration and logistic of supply (Asturias, Centru, North-West Croatia, Slovenia)	Stable (3) Moderate growth (2) Strong growth (1)



Preliminary results - Companies

Type of bioenergy companies	Nº of companies	Regions (N)
Plant's owners	220	9
Biofuel production plants	31	8
District heatings	118	9
Power plants	64	7
Power plants (CHP)	7	1
Operation and maintenance	108691	9
Big installations	26	7
Medium and small installations	108665	7
Manufacturers	236	7
Biomass obtaining and logistics companies	109	7
Engineering and consultancy firms	133	7
Biofuel dealers	131	6
Installers	321	6

Preliminary identification of complementarities in terms of assets/expertise/interest/needs:

- Operation and maintenance: Design and manufacture high-quality price ratio/high performance products (East Slovenia, Centru)
- Plant's owners: Design and manufacture high-quality price ratio products (Centru, North-West Croatia)
- Both: No industrial companies' interest (Centru, Asturias); No skilled staff (Centru, Asturias); Number of services companies (Centru, Asturias, Castille y Leon)



Preliminary results – Institutions: interest at both regional and local level

Interest	Asturias	Centru	Central Finland	North Karelia	East Slovenia
Developing bioenergy uses for raw materials from forestry origin .	✓	✓	✓		
Installation of bioenergy thermal plants .	✓	✓			✓
Developing bioenergy uses for raw materials from MSW.	✓				✓
Developing bioenergy uses for raw materials from agro-food industry.	✓		✓		
Installation of solid biofuel production plants.			✓		✓



Overview preliminary survey results

Identification of prevalent raw materials and installations in 10 regions → Analysis of regional assets/expertise and needs

Type of raw materials	Regions (N)	Regions	Areas for collaborations
Bioenergy raw material from forestry	8	Asturias; Centru; Central Finland; Castilla y León; Lapland; North-West Croatia; Slovenia; South Ostrobothnia	<ul style="list-style-type: none"> Management harvesting, Forestry machinery (Asturias, South Ostrobothnia, Castilla y León) Logistic of supply (Asturias, East Slovenia, Centru, North-West Croatia) Transparent market (Castilla y León, Slovenia, Asturias) Etc.
Bioenergy raw material from urban residues origin	5	Asturias; Centru; Central Finland; Lapland; South Ostrobothnia	<ul style="list-style-type: none"> Logistic of supply (Lapland, Centru, Asturias) Marketing tools (Asturias, Central Finland)
Bioenergy raw material from agriculture (herbaceous or ligneous)	4	Centru; Central Finland; Castilla y León; South Ostrobothnia	<ul style="list-style-type: none"> Training / knowledge (Central Finland, Centru)

Types of plants	Species	Nº of plants	Regions (N)	Regions	Areas for collaborations
Biofuel	Chips plants	96	2	East Slovenia; South Ostrobothnia	Needs to develop marketing tools (Slovenia, Castilla y León)
	Pellets plants	31	5	Castilla y León; Kainuu; North Karelia; East Slovenia; South Ostrobothnia	
Power plants	Biogas plants	26	5	Asturias; Kainuu; North Karelia; East Slovenia; South Ostrobothnia	Convincing studies about possibilities in order to tackle controversy (Asturias, Slovenia)
	Chips plants	34	4	Asturias; Kainuu; North Karelia; East Slovenia	A decrease of exploitation cost through good logistic of supply (Asturias, Slovenia)
Energy plants	Chips plants	182	7	Asturias; Centru; Kainuu; North Karelia; North-West Croatia; East Slovenia; South Ostrobothnia	Building and strengthening the value chain: consumers interest, Farmers and harvesters collaboration and logistic of supply (Asturias, Centru, North-West Croatia, East Slovenia)
	Pellets plants	51	4	Asturias; Centru; East Slovenia; South Ostrobothnia	Involve and inform municipalities to a profit use of its bioenergy raw material

Suggestions of additional specific areas for cross regional collaborations



Possible areas for cross regional collaboration

- Biomass installations in rural areas/communities (*ongoing*);
- Energy Plants (chips plants): Building and strengthening the value chain - consumers interest, Farmers and harvesters collaboration and logistic of supply (*Asturias, Centru, North-West Croatia, Slovenia*)
- Power plants (biogas plants): Convincing studies about possibilities in order to tackle controversy (*Asturias, East Slovenia*)
- Bioenergy raw materials from forestry:
 - Management harvesting, Forestry machinery (*Asturias, South Ostrobothnia, Castilla y León*)
 - Logistic of supply (*Asturias, East Slovenia, Centru, North-West Croatia*)